Photonics21 Press Release

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European photonics to create 1 million new jobs by 2030

Instant diagnosis of major diseases, the eradication of all road accidents, and the creation of 1 million new jobs are some of the benefits that will be generated by the Photonics sector by 2030 according to a new vision paper published by Photonics21.

The vision paper *'Europe's Age of Light'* sets out a new strategy for the future of European photonics highlighting what could be achieved if this technology is maintained by the EU as a key funding priority in FP9. The paper was created through consultation with the photonics community, including more than 1,700 companies and research organizations.

The paper demonstrates how Photonics or light-based technologies are critical to enabling a future where driverless vehicles can eradicate road accidents, where advanced healthcare diagnostics allow instant detection of disease, and where industrial production will be revolutionized creating 1 million new jobs by 2030.

Photonics21 President Aldo Kamper said:

"The Photonics21 Vision Paper highlights what Europe could achieve if we have continued support from the EU through FP9: sustained economic growth, up to 1 million new jobs, improved healthcare, and a driverless vehicle revolution."

"The photon will do for the twenty first century what the electron did for the twentieth. We are already at the forefront of this technological revolution: harnessing the power of light to solve our greatest global challenges."

"As light particles, or photons, replace electrons in many of our most important technologies, innovations in the pipeline are improving healthcare, growing food, saving energy, reducing pollution, expanding connectivity, transforming manufacturing and ushering in a new era of mobility."

Benefits to be Delivered by 2030

The Vision Paper highlights how European leadership in photonics will deliver wide-ranging benefits by 2030 including:

Transport - In 2030, mobility will be based on multimodal transport where driving will be automated, connected and electric to maximise safety, efficiency and comfort. Photonics provides essential components, systems and production tools for all aspects of connected mobility, from driver assistance and traffic monitoring to photonics-based IT and telecommunications.

Health - In 2030, healthcare will be fast, precise and cost-effective. Advanced diagnostics, pervasive monitoring and innovative e-health applications will be able to detect body signals, symptoms and diseases early on. Treatment will be targeted, minimally invasive and increasingly effective, reducing disability and mortality from cancer, strokes and other major diseases.

Diagnosis and treatment will be delivered instantly at the point of care, thanks to the new science of "theranostics." With the help of these and other innovations, Europe will keep an ageing population healthy and fit.

Jobs - In 2030, European factories will be fast, green and flexible. Photonics technology, including lasers, sensors and 3D displays, will revolutionise industrial production and working environments, making manufacturing more innovative, cost-competitive and resource-efficient. A fully digital value chain from supplier to customer will give birth to new forms of collaboration and customisation, new services and new business models – all of which will strengthen Europe's industrial base and create up to 1 million new jobs.

Food - In 2030, the technology to feed the world, to push back food-borne illness, and to reduce the environmental footprint of agriculture, fisheries and aquaculture will exist. Photonics will help supply safe, nutritious and affordable food for all and establish a sustainable value chain from farm to fork. By using more precise sensors and measuring devices, farmers, food processors and ordinary consumers will be able to monitor and certify the safety, quality, content and even the origin of food – anytime and anywhere.

European Photonics Market

The paper also outlines the potential for Europe to increase its market share. The global photonics market is poised to grow to €615 billion by 2020. With a share of 15.5%, Europe is the world's second-biggest supplier of photonics after China. However, with Chinese research and development currently focusing on photovoltaics, displays, lighting and other commodity products, Europe is the centre of global photonics innovation today.

"If Europe can stay at the forefront of photonics innovation and capitalise on fast-expanding global markets, a tripling of European production to more than EUR 200 billion by 2030 is realistic," said Kamper.

With over 10% of the sector's revenues spent on R&D and with European photonics clusters linking companies with universities, research facilities and public-sector agencies across disciplines, industrial sectors and countries, the report shows that the European photonics industry is committed to achieving its goals.

"We are taking a proactive stance" said Kamper, "but in order to achieve these goals, a number of specific measures will be needed: a European strategy for photonics leadership must be created and implemented."

"A coordinated strategy involving all public and private stakeholders creates the momentum and unleashes the broad spill-over effects needed to address global challenges, exploit future markets and create jobs in Europe."

Kamper believes that the education and training of tomorrow's specialists today cannot be over emphasized.

"Measures should include a coordinated public-private plan to define skill sets and curricula for professions in photonics. The harnessing of light should be a flagship science in schools, universities and across the education system."

“Boosting opportunities for entrepreneurship in the photonics sector is essential. Access to risk finance must be improved by establishing a Europe-wide fund for photonics start-up, growth and bridge capital.”

“Europe needs to speed up the uptake of technology and its translation into new products and services.” Kamper said.

About Photonics21

Photonics21 is the European Technology Platform (ETP) for photonics, a technology encompassing all of the products and processes around the emission, manipulation and detection of light. Photonics is integral to a wide range of industries that include the medical, healthcare, transport, manufacturing, and telecommunications sectors.

"Photonics21" was set up in December 2005 to bring the community of photonics researchers and industries together. The European Commission defined photonics as one of six European Key Enabling Technologies (KET's) in September 2009. Shortly after, the European Research & Innovation Program "Horizon 2020" invited Photonics21 to become a "Public Private Partnership" (PPP). The "Photonics 21 Association", a legal entity under Belgium law, became the private contract partner in November 2013 in a Public Private Partnership (PPP) in conjunction with the EU Commission.

Today Photonics21 represents more than 3000 personal members from across Europe and abroad. Our members are experts in the photonics industry, research organisations and universities who actively engage with us to develop a joint photonics strategy for future research and innovation in Europe.

With the global photonics market growing from €350 Billion in 2011 to €447 Billion in 2015, Photonics remains a strong industry. The European photonics industry, estimated to be worth €70 billion, has considerable global leadership positions and employs over 300,000 people directly.

With positive growth forecast, current industry trends like digitalisation, resource efficiency, individual and zero failure production will drive the photonics industry further.

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